Undoubtedly, in no other medical topic is the gap that exists between perception and reality wider than it is with breast cancer, particularly as it relates to the role mammography plays in the diagnosis and prognosis of this disease. The large number of articles that summarize surveys recording women’s perceptions of this topic clearly illustrate this. What follows are just some examples.

**The Public’s Perceptions: Mammography and Breast Cancer**

Women overestimate their probability of dying of breast cancer by more than 20-fold and the value of screening mammography in reducing that risk by 100-fold [4]. Forty-four percent of women believe screening mammography has a sensitivity of 100% and therefore finds all breast cancers, and 45% say financial compensation should be awarded for a breast cancer missed by screening mammography even if the cancer could not be visualized [5]. Fifty-seven percent of women believe that mammography prevents or reduces the risk of contracting breast cancer, and 62% of women believe that mammography reduces mortality from breast cancer by 50–75% [6]. Seventy-four percent of adults believe that finding cancer early saves lives most or all of the time [7], and one third of women believe that mammography will find breast cancer in at least 10% of the women undergoing their initial imaging [8].

Two other recently published surveys are noteworthy. First, women who elected to undergo prophylactic bilateral mastectomy because of either a strong family history of breast cancer or because they were carriers of *BRCA1* or *BRCA2* genes, estimated that their lifetime risk of developing breast cancer without mastectomies was 76%, with 28% of the women estimating that their lifetime risk for developing breast cancer was 100%.

Independent mathematic models for calculating individual breast cancer risk by applying the Gail model or the Claus model estimated the average risk in these same women to be 26% [9]. Second, a survey conducted among women in whom ductal carcinoma in situ (DCIS) was diagnosed disclosed that 40% of the women perceived that there was at least a moderate risk of developing invasive cancer within the next 5 years and a 53% risk within their lifetime. Researchers stated that the risk of developing invasive breast cancer after a diagnosis of DCIS that has been treated is actually less than 1% [10].

**Radiologists’ Perceptions: Malpractice and Breast Cancer**

As indicated, the medical literature is replete with reports of surveys documenting unrealistic perceptions held by the public with regard to mammography and breast cancer. Surprisingly little, however, has been published about the perceptions of physicians regarding this topic. An article published in 1992 [11] focused on physicians’ perceptions of the risk of being sued for medical malpractice in cases involving myriad allegations of wrongdoing unrelated to...
breast cancer. In 2005, Elmore and her
group of researchers [12] at the University of
Washington reported the results of a survey
that assessed radiologists’ perceptions regard­
ing the likelihood they would be sued for
medical malpractice arising from their
interpretations of mammography. The re­
searchers found that a cohort of radiologists
who had at least 10 years of mammography
experience and spent more than 20% of
their work time on breast imaging had an
average perceived risk of 41% of being sued
for malpractice during the following 5 years;
a quarter of the radiologists perceived their
risk of being sued in the following 5 years to
be 70% or higher.

Elsewhere in this issue of the American
Journal of Roentgenology, the same group of
researchers [13] not only present the results
of a similar 2006 survey of radiologists but
also a comparison between radiologists’
2002 risk estimates and the actual incidence
of malpractice lawsuits filed against them.
The results are rather startling: Radiologists
overestimated the likelihood of their getting
sued for malpractice because of alleged
misinterpretation of mammography to an
extent not dissimilar to the public’s over­
estimation of the accuracy and benefit of
mammography. The gap between the public’s
perception and the reality of the attributes
of mammography appears to be neither wider
nor narrower than the radiologists’ gap
between perception and reality regarding the
threat of malpractice litigation.

Let us return to the earlier 2002 survey.
Elmore and her researchers [12] asked radiologists who interpret mammography
what they believe the probability to be that
a medical malpractice lawsuit involving
mammography would be filed against them
within the subsequent 5 years. Radiologists’
perception of their risk of being sued ranged
from 2.5% to 100%, with a mean of 41% and
a median of 30%. Interestingly, data from
the updated 2006 survey [13] showed the
perceived risk of being sued over the next 5 years to be rather similar: a mean of
35%, and a median of 25%. However, the
data disclosed that, in fact, only 10% of the
radiologists surveyed in 2002 were sued.
In other words, the average perceived risk
of being subjected to a malpractice lawsuit
arising from mammographic interpretation
within the following 5 years was nearly four
times higher than the actual prevalence.

Apparently, when it comes to the triad
of breast cancer, mammography, and mal­
practice, reality is overshadowed by
perception in the minds of both the public
and the radiology community. Let us briefly
explore the cause of this disparity between
perception and reality.

The Gap Between Perception and
Reality Regarding Malpractice,
Breast Cancer, and Mammography

It is not difficult to determine why the
public’s perception of the attributes of
mammography so dramatically exceeds
reality. Nearly a decade ago, New York Times
medical reporter Jane Brody wrote [14]:

The public has come to view the
breast cancer risks most talked about as those
that are most serious. That is why one
quarter of the population believes that
breast cancer is the leading cause of
death in American women. This is due
to the constant barrage of media reports
on the disease American women have
come to fear most…. Lung cancer kills
50% more American women than does
breast cancer.

The reporter’s use of the word “barrage” is
not an understatement. A survey of six high­
circulation U.S. newspapers revealed that
their articles were twice as likely to empha­
size the benefits of mammography as to
express any reservations about it [15].
As a public service for encouraging women to
undergo mammography, American news­
papers and magazines regularly publish
advertisements prepared by the American
Cancer Society and related health entities
that extol the virtues of mammography [16].
Hospitals and radiologists from time to time
exaggerate the capability of mammography
by claiming that mammograms “can often
detect tumors as small as the head of a pin”
[17] or that “mammograms can detect breast
cancers as small as one fifth of an inch [5
mm]” [18]. Another survey of news articles
in 10 of the most heavily circulated U.S.
newspapers as well as transcripts of three
major television networks disclosed that 60%
of articles and transcripts highlighted only
the benefits of mammography in reducing
breast cancer mortality without any mention
of potential downsides and recommended
that women should “probably” or “definitely”
undergo screening mammography [19].

Although the influence of the news
media is substantial in elevating the public’s
perception of the value of mammography
to unrealistically high expectations, the
influence of the federal government and
the courts cannot be ignored. In 2002, then
U.S. Secretary of Agriculture Ann Veneman
announced that she had developed DCIS
[20]. Emphasizing in a press conference
that Veneman’s cancer “could not have been
detected without a mammogram,” President
George W. Bush said [21]:

I knew I picked an extraordinary per­
sion when I named her to run the
Department of Agriculture. I didn’t re­
alyze I was going to pick a heroic figure as
well, an example for many people to
understand the need to get a mammogram,
the need to take care of yourself, the need
to screen early, the need to understand
that we can stop cancer in its tracks if we
all take wise moves.

An example of the judiciary’s contribu­
tion toward unrealistically raising the
public’s perception of the relationship be­
tween mammography and early diagnosis
of breast cancer can be seen in an excerpt
of a New Jersey State Supreme Court
decision that involved misinterpretation of
a mammogram [22]:

Delaying cancer diagnosis usually
increases the risk of metastases…. This
concept of “the earlier the better” is the
basis for improved survival in patients
with carcinoma of the breast. Cancer’s
specific survival time is better when
symptoms have been present for 1 week
or less as compared with those who
have symptom duration of 6 months or
more…. Failure to have made a timely
diagnosis [causes] great pain and
mental anguish…. Courts have come
to recognize that mental and emotional
distress is just as “real” as physical pain.

“Hyperbole” emanating from the news
media has caused some American women
to become “terrified” [23] and made to feel
guilty if they have not undergone screening
mammography. Indeed, one large survey
revealed that 67% of adults believe that a
55-year-old person not undergoing routine
cancer screening is being irresponsible
to his or her family [7]. An example of such
guilt and feeling of irresponsibility can be
found in the words of Elizabeth Edwards,
wife of former North Carolina Senator and
then Presidential contender John Edwards,
who had just made public the fact that her breast cancer had metastasized to her bones and lungs [24]:

My cancer had a chance to migrate because I sat at home doing whatever I thought was important, and I didn’t get mammograms. I do not have to be in this situation. I am responsible for putting myself, my husband, and my family at risk. I did that by my own negligence about my health.

Why do radiologists’ perceptions of the risk of becoming a defendant in a medical malpractice lawsuit alleging a delay in the diagnosis of breast cancer far exceed the reality of actual incidence? Dick et al. [13] attribute this to the mass media’s “actively” reporting errors in medicine and frequent emphasis on breast cancer malpractice litigation, which in turn “heightens radiologists’ awareness and anxiety regarding malpractice issues.” These researchers further suggest that this anxiety is increased by the “many medical societies and other physician interest groups” that “have vigorously publicized the challenges in the current malpractice environment in hopes of encouraging tort reform” [13].

In his book on medical malpractice, journalist Barry Werth [25] observes that almost all malpractice cases are decided “not on the basis of fact but on the perception of what a jury is likely to think is fact.” In the legal arena, perception becomes reality.

Dick et al. [13] conclude their article by emphasizing the need to lessen the anxiety of radiologists and to develop among them an accurate perception of malpractice lawsuit risk. The same can be said about members of the public: Their perceptions about the efficacy of mammography in reducing mortality from breast cancer must be brought closer to reality. Only through education will the gap between perception and reality be closed in the minds of both the public and radiologists. Only through education will the public understand that the standard of care in mammographic interpretation is not one of perfection but rather one of reasonableness. Only through education will the public’s expectation of radiologic performance be brought to a level such that only meritorious malpractice litigation involving mammography is initiated. Only through education will radiologists once again resume choosing the field of breast imaging and gladly continue their involvement in it.

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FOR YOUR INFORMATION
The reader’s attention is directed to the article pertaining to this commentary, which appears on the preceding pages.

The comprehensive and newly updated book, Malpractice Issues in Radiology, 3rd edition, by Leonard Berlin, is now available! For more information or to purchase a copy, see see www.arrs.org.